

Claims

What is claimed is:

1 1. A method of reducing data movement within a
2 computing environment, said method comprising:

3 transmitting data between a file system of a
4 computing unit of said computing environment and a
5 transmission medium of said computing environment; and

6 wherein said transmitting comprises bypassing non-
7 file system buffers of said computing unit in
8 performing the transmission.

1 2. The method of claim 1, wherein said transmitting
2 comprises sending data from a sender of said computing
3 environment over said transmission medium to said file
4 system to be written to one or more storage media coupled to
5 said file system.

1 3. The method of claim 2, wherein said sending
2 comprises sending said data over said transmission medium
3 using one or more buffers associated with said sender, and
4 wherein said method further comprises receiving said data by
5 said file system, said receiving comprising swapping one or
6 more buffers associated with said file system with said one
7 or more buffers associated with said sender.

1 4. The method of claim 3, wherein said swapping avoids
2 copying data from said one or more buffers associated with
3 said sender to said one or more buffers associated with said
4 file system.

1 5. The method of claim 3, further comprising obtaining
2 said one or more buffers associated with said file system,
3 prior to said receiving.

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1 6. The method of claim 3, further comprising returning
2 said one or more buffers associated with said file system to
3 free storage, subsequent to said swapping.

1 7. The method of claim 3, further comprising
2 translating data in said one or more buffers associated with
3 said file system to a format compatible with said file
4 system, said translating being performed within said one or
5 more buffers associated with said file system.

1 8. The method of claim 7, further comprising
2 determining that translating is to be performed, said
3 determining comprising checking a translation indicator to
4 determine if translation is to be performed.

1 9. The method of claim 1, wherein said transmitting
2 comprises sending data from said file system over said
3 transmission medium to a receiver of said data.

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1 10. The method of claim 9, wherein said sending
2 comprises using a routine identified by said receiver to
3 send said data, wherein said routine is provided one or more
4 pointers to said data to be sent to said receiver.

1 11. The method of claim 9, wherein said sending
2 comprises providing to said receiver one or more pointers to
3 said data.

1 12. A method of reducing data movement within a
2 computing environment, said method comprising:

3 sending data from a sender of said computing
4 environment to a file system of said computing
5 environment, said sending comprising using one or more
6 buffers associated with said sender; and

7 receiving by said file system said data, wherein
8 said receiving comprises swapping one or more buffers
9 associated with said file system with said one or more
10 buffers associated with said sender.

1 13. The method of claim 12, wherein said swapping
2 avoids copying data from said one or more buffers associated
3 with said sender to said one or more buffers associated with
4 said file system.

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12. A method of reducing data movement within a computing environment, said method comprising: sending data from a sender of said computing environment to a file system of said computing environment, said sending comprising using one or more buffers associated with said sender; and receiving by said file system said data, wherein said receiving comprises swapping one or more buffers associated with said file system with said one or more buffers associated with said sender.

1 14. A method of translating data from one format to
2 another format, said method comprising:

3 determining that data located in at least one
4 buffer associated with a file system usable in writing
5 data to one or more storage media coupled to said file
6 system is to be translated from one format to another
7 format; and

8 translating at least a portion of said data in
9 said at least one buffer, said translating being
10 performed within said at least one buffer associated
11 with said file system without requiring copying of said
12 at least portion of said data to one or more other
13 buffers.

1 15. The method of claim 14, wherein said determining
2 comprises checking a translation indicator to determine if
3 translation is to be performed.

1 16. A system of reducing data movement within a
2 computing environment, said system comprising:

AB 3 means for transmitting data between a file system
4 of a computing unit of said computing environment and a
5 transmission medium of said computing environment; and

6 wherein said means for transmitting comprises
7 means for bypassing non-file system buffers of said
8 computing unit in performing the transmission.

1 17. The system of claim 16, wherein said means for
2 transmitting comprises means for sending data from a sender
3 of said computing environment over said transmission medium
4 to said file system to be written to one or more storage
5 media coupled to said file system.

98 1 18. The method of claim 17, wherein said means for
2 sending comprises means for sending said data over said
3 transmission medium using one or more buffers associated
4 with said sender, and wherein said system further comprises
5 means for receiving said data by said file system, said
6 means for receiving comprising means for swapping one or
7 more buffers associated with said file system with said one
8 or more buffers associated with said sender.

1 19. The system of claim 18, wherein said means for
2 swapping avoids copying data from said one or more buffers
3 associated with said sender to said one or more buffers
4 associated with said file system.

1 20. The system of claim 18, further comprising means
2 for obtaining said one or more buffers associated with said
3 file system, prior to said receiving.

1 21. The system of claim 18, further comprising means
2 for returning said one or more buffers associated with said
3 file system to free storage, subsequent to said swapping.

1 22. The system of claim 18, further comprising means
2 for translating data in said one or more buffers associated
3 with said file system to a format compatible with said file
4 system, said translating being performed within said one or
5 more buffers associated with said file system.

1 23. The system of claim 22, further comprising means
2 for determining that translating is to be performed, said
3 means for determining comprising means for checking a
4 translation indicator to determine if translation is to be
5 performed.

1 24. The system of claim 16, wherein said means for
2 transmitting comprises means for sending data from said file
3 system over said transmission medium to a receiver of said
4 data.

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1 25. The system of claim 24, wherein said means for
2 sending comprises means for using a routine identified by
3 said receiver to send said data, wherein said routine is
4 provided one or more pointers to said data to be sent to
5 said receiver.

1 26. The system of claim 24, wherein said means for
2 sending comprises means for providing to said receiver one
3 or more pointers to said data.

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1 27. A system of reducing data movement within a
2 computing environment, said system comprising:

3 a sender of said computing environment adapted to
4 send data to a file system of said computing
5 environment, wherein the sending comprises using one or
6 more buffers associated with said sender; and

7 said file system adapted to receive said data,
8 wherein the receiving comprises swapping one or more
9 buffers associated with said file system with said one
10 or more buffers associated with said sender.

1 28. The system of claim 27, wherein the swapping
2 avoids copying data from said one or more buffers associated
3 with said sender to said one or more buffers associated with
4 said file system.

1 29. A system of translating data from one format to
2 another format, said system comprising:

3 means for determining that data located in at
4 least one buffer associated with a file system usable
5 in writing data to one or more storage media coupled to
6 said file system is to be translated from one format to
7 another format; and

8 means for translating at least a portion of said
9 data in said at least one buffer, said translating
10 being performed within said at least one buffer
11 associated with said file system without requiring
12 copying of said at least portion of said data to one or
13 more other buffers.

1 30. The system of claim 29, wherein said means for
2 determining comprises means for checking a translation
3 indicator to determine if translation is to be performed.

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1 31. At least one program storage device readable by a
2 machine, tangibly embodying at least one program of
3 instructions executable by the machine to perform a method
4 of reducing data movement within a computing environment,
5 said method comprising:

6 transmitting data between a file system of a
7 computing unit of said computing environment and a
8 transmission medium of said computing environment; and

9 wherein said transmitting comprises bypassing non-
10 file system buffers of said computing unit in
11 performing the transmission.

1 32. The at least one program storage device of claim
2 31, wherein said transmitting comprises sending data from a
3 sender of said computing environment over said transmission
4 medium to said file system to be written to one or more
5 storage media coupled to said file system.

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1 33. The at least one program storage device of claim
2 32, wherein said sending comprises sending said data over
3 said transmission medium using one or more buffers
4 associated with said sender, and wherein said method further
5 comprises receiving said data by said file system, said
6 receiving comprising swapping one or more buffers associated
7 with said file system with said one or more buffers
8 associated with said sender.

1 34. The at least one program storage device of claim
2 33, wherein said swapping avoids copying data from said one
3 or more buffers associated with said sender to said one or
4 more buffers associated with said file system.

1 35. The at least one program storage device of claim
2 33, wherein said method further comprises obtaining said one
3 or more buffers associated with said file system, prior to
4 the receiving.

1 36. The at least one program storage device of claim
2 33, wherein said method further comprises returning said one
3 or more buffers associated with said file system to free
4 storage, subsequent to the swapping.

1 37. The at least one program storage device of claim
2 33, wherein said method further comprises translating data
3 in said one or more buffers associated with said file system
4 to a format compatible with said file system, said
5 translating being performed within said one or more buffers
6 associated with said file system.

1 38. The at least one program storage device of claim
2 37, wherein said method further comprises determining that
3 translating is to be performed, said determining comprising
4 checking a translation indicator to determine if translation
5 is to be performed.

1 39. The at least one program storage device of claim
2 31, wherein said transmitting comprises sending data from
3 said file system over said transmission medium to a receiver
4 of said data.

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1 40. The at least one program storage device of claim
2 39, wherein said sending comprises using a routine
3 identified by said receiver to send said data, wherein said
4 routine is provided one or more pointers to said data to be
5 sent to said receiver.

1 41. The at least one program storage device of claim
2 39, wherein said sending comprises providing to said
3 receiver one or more pointers to said data.

1 42. An article of manufacture, comprising:

2 at least one computer usable medium having
3 computer readable program code means embodied therein
4 for causing the reducing of data movement within a
5 computing environment, the computer readable program
6 code means in said article of manufacture comprising:

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8 computer readable program code means for
9 causing a computer to send data from a sender of
10 said computing environment to a file system of
11 said computing environment, said computer readable
12 program code means for causing a computer to send
13 comprising computer readable program code means
14 for causing a computer to use one or more buffers
associated with said sender; and

15 computer readable program code means for
16 causing a computer to receive by said file system
17 the data, wherein said computer readable program
18 code means for causing a computer to receive
19 comprises computer readable program code means for
20 causing a computer to swap one or more buffers
21 associated with said file system with said one or
22 more buffers associated with said sender.

1 44. At least one program storage device readable by a
2 machine, tangibly embodying at least one program of
3 instructions executable by the machine to perform a method
4 of translating data from one format to another format, said
5 method comprising:

6 determining that data located in at least one
7 buffer associated with a file system usable in writing
8 data to one or more storage media coupled to said file
9 system is to be translated from one format to another
10 format; and

11 translating at least a portion of said data in
12 said at least one buffer, said translating being
13 performed within said at least one buffer associated
14 with said file system without requiring copying of said
15 at least portion of said data to one or more other
16 buffers.

1 45. The at least one program storage device of claim
2 44, wherein said determining comprises checking a
3 translation indicator to determine if translation is to be
4 performed.

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